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ABSTRACT

Two separate research methodologies, quantitative analysis and qualitative analysis, were employed to determine the differences in second grade children on method of reading instruction. Fifty children in two classrooms from one school in North Carolina were subjects. One of the two teachers employed a literature based methodology, while the second teacher employed a basal instructional format. Quantitative results conformed to that suggested in the literature; specifically, no significant differences were found in achievement between the two groups. Confounding between teacher and methodology was a major weakness in the study; however, the implementation of qualitative analysis yielded substantial additional information with respect to the underlying reasons for outcomes in the two classrooms. The need for confluence of results of qualitative and quantitative methodologies is strongly supported. (Four tables of data are included.) (Author/SR)

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The Quantitative and Qualitative Analysis Of Second Grade Reading Performance Comparing Literature Based and Basal Instruction

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RUNNING HEAD: Literature vs. Basal

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Abstract

Two research methodologies, quantitative analysis and qualitative analysis are undertaken to determine the differences in second grade children on method of reading instruction. Two classrooms from one school in North Carolina were used. One of the two teachers employed a literature based methodology; the second teacher employed a basal instructional format. Quantitative results conformed to that suggested in the literature; specifically, no significant differences were found in achievement between the two groups.

Confounding between teacher and methodology was a major weakness in the study; however, the implementation of qualitative analysis yielded substantial additional information with respect to the underlying reasons for outcomes in the two classrooms. The need for confluence of results of qualitative and quantitative methodologies is strongly supported.

Behavioral psychology and cognitive psychology have been polarizing reading instruction for several decades. This polarization continues as each tries to dominate and dictate instructional practice. The two schools of thought are founded on antithetical views of human nature and, as part of that nature, language acquisition.

Behavioral psychology, because of its **tabula rasa** perspective of human learning, incorporates a part-to-whole code emphasis approach to reading instruction. This philosophy is typically characterized by the use of phonics and basal readers (Goode & Brophy, 1977).

Cognitive psychology proposes a more holistic use of language to transmit ideas. Terms such as whole language, literature-based instruction, and emergent literacy are terms often used to describe the practices based on cognitive psychology.

Behavioral psychology has dominated reading instructional practices for decades (Shannon, 1989). However, this trend is changing in response to pressure to enhance the state of literacy in the United States (Commission on Reading, 1989).

This study is designed to compare the effects of literature-based instruction and basal instruction in the area of student attitudes toward reading and student achievement in reading. Two separate research methodologies and analyses were employed to investigate the potential diversity in results and conclusions generated by quantitative and qualitative methodologies.

Description of Subjects

The subjects are the entire population of second graders at an alternative school in one of the larger city-county school systems in North Carolina. The school system is located in an industrial county. Children are selected to attend the school by a random drawing. Children are also assigned to classes randomly. There are fifty children in the sample. They represent a cross-section of socio-economic levels. They are two-thirds Caucasian and one-third African American--a reflection of the composition of the school system at large. The sample is separated into two classes of approximately equal ability. They are both, basically, average classes as reflected in their achievement test scores.

One class, an intact cluster, was taught reading using the basal approach. The other class was taught reading using a literature-based approach.

Quantitative Instruments Used

The Elementary Reading Attitude Survey (The Garfield) was administered in September and again in May to determine student attitudes toward reading and measure any changes in attitude during the year. This is a relatively new instrument for measuring attitudes which was normed in 1989, (McKenna & Kear, 1990). It yields a score for attitude toward academic reading, a score for attitude toward recreational reading, and a total score. The change in attitudes was measured by analyzing the pre-attitudes scores on recreational and academic reading and the post attitude scores in those areas.

As the school system requires mastery of the Houghton Mifflin Magazine Tests, these were used as a measure of skills mastery. The difference in the criterion score and the actual score on each subtest of the final three magazines completed was used to assess unit averages. The number of units mastered and the level of grade level growth were also used as indicators of movement through the Houghton-Mifflin Reading Program.

Analysis of the Quantitative Data

Statistics for variables drawn from each experimental group are presented in Table 1. Means and related statistics for both pre and post measures of attitude and of academic achievement

INSERT TABLE 1 ABOUT HERE

are presented. A quick perusal of the means for attitude about reading indicate that during the period under investigation, recreational attitude increased somewhat, while academic attitude actually decreased.

The question of whether instructional methodology had an effect on attitude was tested by using analysis of the covariance between the posttest scores in attitudes toward recreational reading from the Garfield instrument with pretest

INSERT TABLE 2 ABOUT HERE

scores used as the covariate. The analysis of covariance is reflected in Table 2. It reveals a significant difference in the attitudes towards recreational reading since the F value of 4.270 is significant at the .05

level, [$F(1,47) = 4.270$, $p < .05$]. There was a statistical difference in the attitude towards recreational reading between the control group, taught using basal instruction, and the experimental group, taught using literature-based instruction.

A study of the means suggests that the control group (basal) had a better attitude toward recreational reading than the experimental group (literature based). The means for the control group were higher on both the pretest and the posttest. These are reflected in Table 2.

The difference in attitude toward academic reading between the basal group, and the literature-based instructional group was also tested by using analysis of covariance on posttest academic reading scores, with the pretest score used as the covariate.

The analysis of covariance for the attitude towards academic reading yielded an F value of 1.578. This value has a p of .215 which is greater than .05. There was no statistically significant difference in the attitude towards academic reading between the control group, taught using basal instruction, and the

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INSERT TABLE 3 ABOUT HERE

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experimental group, taught using literature-based instruction. These data are presented in Table 3.

Academic variability was examined for the two treatments by employing two t-tests. One t-test was of the means for the number of basal units completed for each group. The other t-test was between the means of the average percentage scores for the last three unit tests completed by each student. Results of both t-tests are displayed in Table 4.

INSERT TABLE 4 ABOUT HERE

The t test results for difference in the number of units mastered between the two instructional practices yield a t value of 1.36. This value has a p of .180 which is greater than .05, [$t(47.99) = 1.36$, p is greater than .05], indicating that the difference was not statistically significant.

Results of the t test for difference in the end of the unit averages between the two instructional practices reveal a t value of 1.58. This value has a p of .120 which is greater than .05, [$t(47.92) = 1.58$, p is

greater than .05]. Thus there was no significant statistical difference in the end of the year unit averages between the two instructional practices.

These two findings are in agreement with most of the statistical analysis of achievement differences between traditional basal and literature based/whole language programs. Using traditional standardized or basal tests, the basal programs consistently do no better than language based programs which do not emphasize the objectives and skills measured by those tests. A question remains as to the outcome of a qualitative analysis of the same study.

Qualitative Instruments Used and Analysis of the Qualitative Data

Student writing samples were selected from the beginning, middle and end of the year. These were analyzed by comparing the class samples at each time of the year. An additional analysis compared individual growth throughout the entire year for both classes. The writing samples were analyzed by two independent evaluators. Each read the beginning of the year sample, for one class and wrote a narrative summation. They, then exchanged samples and followed the same procedure for the other class. This technique was also used for the middle, and the end of the year samples. The whole year analysis was made by combining and evaluating each student's writing samples for the entire year. This permitted an analysis of individual growth as well as growth by class.

Both evaluators found that beginning of the year writing samples in the basal classroom were longer and more creative than those from the literature-based classroom. They were also more descriptive in portraying impressions and feelings.

Writing samples from the middle of the year reflected significant growth in both classes. All samples were longer and more descriptive. The samples from the basal classroom were somewhat longer, yet they were constructed with short choppy sentence structures.

Though the writing samples from the literature-based classroom were somewhat shorter, the sentences were longer and sentence structure was better. Their writing centered on topics that they enjoyed and remembered; thus, they reflected more thought and were more descriptive.

The end of the year writing analysis from the basal classroom revealed an impressive improvement in writing samples. This improvement was evidenced by enhanced sentence structure and syntax, the use of

imagination and descriptive words, and the length. Stories ranged from one page to ten pages in length with the average being two. Stories were generally about ducks and leprechauns.

End of the year writing samples from the literature-based classroom reflected a regression to the short, choppy sentences noted earlier in the year. The stories were short and mechanical sounding. The shortest story was one sentence and the longest was one and a half pages. There were a variety of topics, but most centered around personal objects such as cats, dolls, and stuffed animals.

The analysis of writing for the full year revealed significant growth for all children in both classes, however, growth was more pronounced in the basal classroom. Growth was noted in story length, tone, logic, and sentence structure-including syntax and grammatical complexity. The analysis of writing samples from the literature-based classroom for the full year revealed significant growth from the beginning of the year to the middle, but a regression to earlier levels at the end of the year. Only samples from the middle of the year showed improved sentence structure. Beginning and ending samples reflected the same tone, logic, length, and sentence structure. The tone was bland and the sentence structure consisted of short cryptic statements of fact. Improvement was noted in clarity, spelling and punctuation.

Summative attitudinal questions were developed to ascertain student attitudes toward reading after one year of instruction using each of the two approaches. These were administered at the beginning of the following school year by the teachers. Students were directed to write answers to open-ended questions which they read or had read to them by the teacher. The questions were designed to reflect student's conception of the nature of reading, their likes and dislikes about reading as they perceived it, and their attitude toward reading in general. These were assessed with seven broad questions.

The evaluation procedure described earlier was used again, as it is consistently used throughout the study. The evaluators independently assessed the summative attitudinal questions by looking for patterns in responses. Responses were categorized to reflect student conceptions about the nature of reading and their attitudes toward it. Answers to the attitudinal questions were synthesized to reveal an overall conception of reading by class. The majority of students in the basal classroom defined reading as learning. The students in the literature-based classroom generally defined reading as the basal children did; as learning and as fun. The evaluators individually assessed the children's definitions of reading to categorize them as either meaning

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seekers of decoders. Both evaluators identified the same children in each category in both classrooms. The numbers of decoders and meaning seekers were approximately the same in both classrooms.

Both classes had a very positive attitude toward reading. There were only three negative responses from the basal classroom and two from the literature-based classroom regarding whether they liked reading.

The final tool for qualitative analysis was the semi-structured interview. Four such interviews were conducted to ascertain classroom methodology for writing activities. The interviews reflected divergence in the purposes of writing activities. Both teachers stated checking language mechanics as a purpose of writing instruction; however, the basal teacher also cited neatness and sentence structure as purposes while the literature-based teacher cited assessing the children's understanding of concepts being taught as an additional purpose. The interviews also revealed divergence in the method of topic determination. Topics were pre-chosen and assigned by the teachers in both classrooms; but, the nature of the teacher's choice and the students' freedom within the context of that choice varied. The basal teacher chose general topics and shared items that she enjoyed to facilitate descriptive writing. Students were given words and directed to use as many as possible in their stories. The literature-based teacher chose topics based on books, field trips or classroom activities. Students were charged to chose their own direction and use their own words.

The semi-structured interviews elicited teacher descriptions of methodology employed. These descriptions reflected contrasts in types and amounts of teacher assistance, directedness and praise, and in time allotted to writing activities. The basal teacher indicated that she used basal techniques for teaching reading and writing. She also indicated that she used poetry and journal writing. All writing was teacher directed except the journal writing which was independent. Students wrote every day. They spent ten to fifteen minutes brainstorming and/or webbing before writing and thirty additional minutes writing. The teacher assisted during the writing by writing words that students requested in their personal dictionaries. After writing, the teacher read all the student's compositions and put a happy face on them. She didn't grade them.

The literature-based teacher described her instruction as process oriented writing. She used a combination of teacher directed and independent writing activities. There were many small group book projects. Students wrote daily in private journals and weekly in a sustained silent writing manner wherein everyone including the teacher wrote silently. At the beginning of the school year the teacher modeled

writing for the children. She spent one class period on initial background building and discussion. The teacher assisted students by writing words on the board that she anticipated that they would need or that they asked for specifically before beginning to write. After writing some one-on-one editing and some peer editing occurred. The teacher read all work except private writing which was put in the student's journal. She did not grade any writing.

The final factor addressed with the interview was an attitudinal one. Both teachers noticed an increase in student enjoyment of journal writing and a noticeable difference in spontaneous reading. The basal teacher indicated that the children began to enjoy writing in their journals around the middle of the year. She also noticed the changes in spontaneous reading and felt that they were attributable to students with very high reading levels directing the other students to read. The literature-based teacher noticed an increase in student enthusiasm in journal writing. She instituted a program of sustained silent reading toward the end of the year to facilitate spontaneous reading.

All instruments were analyzed by two trained qualitative evaluators, who were professionals with extensive background in reading methodologies. All scoring was done in isolation. Collaboration occurred only in the development of the questions for the semi-structured interview and after data analysis. The identity of the data was not disclosed to the evaluators until after all tools were scored.

Conclusions

The quantitative findings from this study compare with results from Holland and Hall (1989) who did a similar study analyzing the effects of whole language and basal instruction on reading achievement in first grade. They found no statistically significant differences in the reading achievement between the two instructional approaches. While whole language is not literature-based instruction, they share a common theoretical basis. They thus share many common principles and techniques. While results from the current study show no gain for being taught with literature-based instruction over the basal approach, they also, generally, show no loss. This is particularly relevant considering that the assessment was done using materials specifically aligned with the basal instructional program. Few tools have been designed to measure the process growth that usually accompanies the use of literature-based instruction.

The results from the analysis of covariance on the question of change in attitude toward recreational reading are not consistent with other research findings. While Holland and Hall (1989) did not test the

statistical significance of attitude variables, they did observe that children enjoyed reading class more who were taught using whole language, they participated more in class and seemed more relaxed. Some of the divergence from other research findings may be due to confounding of treatment and teacher factors as a result of having only one teacher involved with each of the two instructional methods.

Qualitative analysis revealed substantial writing growth for all children; however, the growth was more pronounced and sustained in the basal classroom. The teacher descriptions of methodology indicated no clearly definable method employed, rather both teachers used eclectic approaches with many variations. The basal teacher's use of brainstorming and webbing was inconsistent with a basal approach, and the literature-based teacher's use of assigned topics was inconsistent with process writing. Stories sampled from the beginning, middle, and end of the year in the basal classroom were respectively about summer fun; a field trip, Christmas, or a red, blue and white duck; and a leprechaun. Stories from the literature-based classroom were all initially entitled "about myself"; the middle of the year samples were all about a field trip or Christmas; and the final ones were about a stuffed animal. The consistency of topics reflects a high level of teacher directedness in both classes; yet, the basal children writing growth was more evident. Many factors may have influenced this growth discrepancy such as variation in amount of teacher monitoring. Analysis of teacher interview data revealed that the basal teacher seemed to monitor the writing daily; the literature-based teacher seemed to monitor it weekly. Other variables which may have effected the quality of the writing are: amount and type of teacher assistance, level of independence required, amount of time allotted, degree and expression of teacher enjoyment, and type of teacher praise.

The study suggests that a lack of consistency may exist between the practices of teaching reading and those of teaching writing. Furthermore, it suggests a need to study classroom practices and their impact upon student writing.

A Final Perspective

The quantitative aspect of this study was tainted by confounding of results with the effect of the teacher. Only one teacher was employed for each treatment. Conventionally, the confounding of results in this manner would have been all that could have been said conclusively about the study. The inclusion of qualitative analysis, planned at the inception of the study, allows for the investigation of the results of that

confounding effect, and provides additional explanation of the final outcomes. The results, higher affective scores for basal - no academic difference, did not change. The explanation of those results was both broader and deeper with the combination of the two research methodologies. More studies of tighter quantitative design, employing both quantitative and qualitative methodologies must be implemented if real views of the writing/reading connections in literacy development are to be established.

Table 1
Variable Statistics

	Mean	St.Dev.	Min	Max
Recreational Pre	29.70	6.47	15.00	40.00
Basal	30.52	6.89	18.00	18.00
Lit. Based	28.88	6.05	15.00	37.00
Recreational Post	31.26	6.57	10.00	40.00
Basal	33.20	6.11	20.00	40.00
Lit. Based	29.32	6.56	10.00	39.00
Academic Pre	29.42	7.79	13.00	40.00
Basal	30.80	7.46	17.00	40.00
Lit. Based	28.04	8.02	13.00	40.00
Academic Post	28.42	7.63	10.00	40.00
Basal	30.24	7.14	19.00	40.00
Lit. Based	26.60	7.82	10.00	40.00
# of Units	5.76	2.10	0.00	10.00
Basal	6.16	2.10	0.00	10.00
Lit. Based	5.36	2.06	0.00	10.00
Unit Averages	0.88	0.32	0.00	1.22
Basal	0.95	0.33	0.00	1.21
Lit. Based	0.81	0.31	0.00	1.22

Table 2
Analysis of Covariance
Recreational Attitude Posttest
by Group
With Recreational Attitude pretest

source of variation	sum of squares	df	mean square	f	signif of f
covariates	949.348	1	949.348	41.734	.000
Recpre	949.348	1	949.348	41.734	.000
Main effects	97.131	1	97.131	4.270	.044
Group	97.131	1	97.131	4.270	.044
Explained	1046.479	2	523.240	23.002	.000
Residual	1069.141	47	22.748		
Total	2115.620	49	43.176		

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* * * C E L L M E A N S * * *

Recreational
Post
by Group

total population

31.26
(50)

group

1	2
33.20	29.32
(25)	(25)

Table 3
Analysis of Covariance
Academic Attitude Posttest
by Group
With Academic Attitude pretest

source of variation	sum of squares	df	mean square	f	signif of f
covariates	639.550	1	639.550	14.029	.000
Acadpre	639.550	1	639.550	14.029	.000
Main effects	71.931	1	71.931	1.578	.215
Group	71.931	1	71.931	1.578	.215
Explained	711.481	2	355.741	7.803	.001
Residual	2142.699	47	45.589		
Total	2854.180	49	58.249		

* * * C E L L M E A N S * * *

Academic
Post
by Group

total population

28.42
(50)

group

1	2
30.24	26.60
(25)	(25)

Table 4
T-Tests of achievement variables

group 1 - Basal

group 2 - Literature based

Variable	number of cases	mean	standard deviation	standard error
units				
group 1	25	6.1600	2.095	.419
group 2	25	5.3600	2.059	.412

		* Pooled variance estimate			* separate variance estimate		
f value	2-tail prob.	* t Value	degrees of freedom	2-tail prob.	* t Value	degrees of freedom	2-tail prob.
1.04	.933	* 1.36	48	.180	* 1.36	47.99	.180

Variable	number of cases	mean	standard deviation	standard error
unitavg				
group 1	25	.9516	.325	.065
Group 2	25	.8088	.312	.062

		* Pooled variance estimate			* separate variance estimate		
f value	2-tail prob.	* t Value	degrees of freedom	2-tail prob.	* t Value	degrees of freedom	2-tail prob.
1.09	.840	* 1.58	48	.120	* 1.58	47.92	.120

References

Commission on Reading. (1989). Basal readers and the state of American reading instruction: A call for action. Language arts, 66, 896-898.

Good, T. & Brophy, J. (1977). Educational psychology: A realistic approach. New York: Holt, Rinehart & Winston.

Holland, K. & Hall, L. (1989). Reading achievement in the first grade classroom: A comparison of basal and whole language approaches. Reading Improvement, 26, 323-329.

McKenna, M. & Kear, D. (1990). Measuring attitude toward reading: A new tool for teachers. The Reading Teacher, 43, 9, 626-639.

Shannon, P. (1989). Basal readers: Three perspectives. Theory Into Practice, 28, 235-239.